UNITED NATIONS DEVELOPMENT PROGRAMME

UNDP

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(IND/79/005)
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APPROVAL OF UNDP ASSISTANCE TO A PROJECT OF THE GOVERNMENT OF INDIA

Vacuum Standards (IND/79/005)

Report of the Administrator*

Date of present approval:	February 1980
Starting date of project activities:	May 1980 (planned)
Planned completion date:	November 1984
To be executed by:	United Nations Industrial Development Organization (UNIDO)
Government implementing agency:	National Physical Laboratory (NPL) (Council of Scientific and Industrial Research)
Estimated cost of assistance planned under present approval:	$ 281 000
Source of UNDP financing:	Indicative Planning Figure (IPF)

I. Background

1. The need to establish a complete range of standards in vacuum measurements has been emphasized time and again by Indian industry. Accordingly, specifications in the field of vacuum technology are in the process of being formulated and finalised. Meanwhile, the National Physical Laboratory, which is responsible for maintaining national standards of physical measurements for base and derived units, has initiated, in collaboration with three other national scientific institutions, a programme for the development of electron-optical instruments. With reference to the activities mentioned above, the Laboratory is engaged in developing semi-automatic and automatic high vacuum systems for these instruments.

*In accordance with General Assembly resolution 2688 (XXV) and subsequent authorizations of the UNDP Governing Council, reports are issued seriatim on the approval of UNDP assistance of $250,000 or more (including, if any, assistance financed by Government or by third-party cost sharing).

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2. The project will support the efforts of the National Physical Laboratory in the above tasks. Furthermore, various industries in public as well as in private sectors will be able to utilize the facilities set up under the project to enhance the accuracy and the performance of their products. Under the related project (IND/79/004), UNDP is providing assistance to the establishment of primary and transfer pressure standards.

II. Objectives and activities

3. The immediate objectives of the project are to establish (a) primary and pressure standard facilities for the calibration of vacuum gauges and the testing of vacuum pumps and vaccum equipment: and (b) ultra high vacuum facilities of the order of 10^{-11} torr to develop ultra high vacuum techniques for research in surface sciences and allied fields. The activities of the project include (a) the setting up of (i) a Tsakeable McLeod gauge using compression techniques in the range of 10^{-2} to 5 x 10^{-6} torr: (ii) a standard manometer using capacities methods in the range of 1000 to 10^{-5} torr: (iii) an Orifice method for low pressure standards starting from 10^{-3} to 10^{-7} torr; and (iv) ultra high vacuum facilities in the order of 10^{-11} torr; (b) the training of staff.

III. Inputs

4. UNDP will provide, through the Executing Agency, consultants, fellowships, study tours and equipment.

5. The Government of India will provide qualified personnel, buildings, supplies and equipment, including gauges and measuring and tool room equipment.

IV. Financial data

6. The expenditure components of the planned assistance are as follows:

	$
Personnel	26 400
Training	25 000
Equipment	222 000
Miscellaneous	5 500
	281 900

7. The estimated total value, expressed in US dollars, of the inputs provided directly by the Government to the project is $ 254,750 in kind.

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